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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 08/749,766

Filing Date: November 20, 1996

Appellant(s): METCALF, RANDALL B.

Mr. James G. Gatto
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5 August 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The amendment after final rejection filed on 30 August 2004 has been entered.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that all claims do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *ClaimsAppealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

1,765,735	Phinney	06-1930
5,740,260	Odom	04-1998 (Ap. Date 05-1995)
3,540,545	Herleman et al.	11-1970
3,158,695	Camras	11-1964
4,408,095	Ariga et al.	10-1983
4,422,048	Edwards	11-1983
4,481,660	de Koning et al.	11-1984

(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 29, 30, 108 and 109 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phinney (US Patent 1,765,735) in view of Odom (US Patent 5,740,260).

Claim 1 recites several extremely broad limitations. One such limitation is "means for separately receiving sounds produced by a plurality of sound sources". This limitation does not actually

require a one-to-one correspondence between each of the separately received sounds and each of the sound sources. For example, a large orchestra comprises a plurality of sound sources. A pair of microphones placed a distance apart from each other would, due to their spatial separation, pick up different sounds. As such, the microphones would be “separately receiving sounds produced by a plurality of sound sources”. Further, the microphones would be “converting the separately received sounds to a plurality of separate audio signals”. While appellant’s disclosure and arguments are based on an embodiment in which there is a one-to-one correspondence between sound sources, microphones, recordings, amplifiers, loudspeakers, etc. and, in the interest of compact prosecution, examiner has cited a reference that also has these attributes, it should be noted that it is not required by the claim. In addition, the term “sound source” is extremely broad. It can refer to an entire orchestra, a group of instruments within an orchestra, a single instrument or a particular string on a single instrument. All of these produce sound and are, therefore, sound sources. Other broad recitations in the claim involve the use of the term “network”. Merriam-Webster’s Ninth Collegiate Dictionary defines a network as “an interconnected or interrelated chain, group, or system”. In this case, the amplifiers and loudspeakers disclosed by Phinney are interrelated because they are used together for a common purpose and, therefore, constitute networks. The limitation in the claim “each of the amplifier means comprising one or more amplifier elements” reads on any amplifier since any amplifier must have at least one element.

Regarding Claim 1, Phinney discloses “the use of sound recording devices, each corresponding to a particular section of a concerted performance, whereby the complete characteristics of each section may be separately recorded and controlled, together with a plurality of corresponding

reproducing devices whose individual operations are combined to give to an auditor an impression corresponding to that of an original performance" (page 1, lines 22-31) (i.e., a sound system for capturing and reproducing sounds produced by a plurality of sound sources comprising: means for separately receiving sounds produced by the plurality of sound sources (Fig. 1, reference 1); means for converting the separately received sound sources to a plurality of separate audio signals without mixing the audio signals (Fig. 1, reference 8, 9); and means for separately storing the plurality of separate audio signals without mixing the audio signals (Fig. 1, reference 11-17). Phinney further discloses reproduction with each loudspeaker operated under control of a corresponding one of the sound records (page 2, lines 69-74) (i.e., means for separately retrieving over separate signal paths the stored audio signals (Fig. 2). Phinney further discloses a "suitable amplifying apparatus" associated with each sound record (page 2, lines 101-104) (i.e., an amplification network comprising a plurality of amplifier means (Fig. 2, reference 27, 28) with separate amplifier means in the separate signal paths for separately amplifying each of the separate audio signals). Further, the amplifiers disclosed by Phinney are employed together for a common purpose and as such comprise a network. The limitation in the claim "each of the amplifier means comprising one or more amplifier elements" reads on any amplifier since any amplifier must have at least one element. Phinney further discloses a plurality of loudspeaking devices, each operated under control of a corresponding one of the sound records (page 2, lines 69-74) (i.e., a loudspeaker network comprising a plurality of loudspeaker means, with separate loudspeaker means in the separate signal paths for reproducing the separately amplified audio signals (Fig. 2, reference 18, 19). Therefore, Phinney anticipates all elements of Claim 1 except the amplifier means being under common control and a dynamic control means

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for individually controlling each of the amplifier means to enable automatic simultaneous control over the amplifier means. Odom discloses a sound processor interface that individually controls volume on a plurality of audio channels (column 3, lines 15-30, 56-60). Odom further discloses the sound processor being suitable for adapting an audio program that frequently changes venues (column 2, lines 44-59; column 3, lines 53-61). Phinney discloses use of the recording and reproducing system in conjunction with a motion picture (page 2, lines 115-125). Because motion pictures are projected in theatres with varying configurations and acoustic characteristics, it would have been obvious to one skilled in the art at the time of the invention to apply automatic individual control of audio channel volume as taught by Odom to the recording and reproducing system taught by Phinney for the purpose of rapidly adapting the system to different locations and providing a convenient way to save and reapply previously saved parameters for a particular location (Odom: column 2, line 44 through column 3, line 6).

Regarding Claim 29, all elements of Claim 29 are comprehended by Claim 1 except the dynamic control means controlling individual elements of the amplifier means. Odom discloses an analog signal processor in each audio signal channel (column 6, lines 30-36) that forms an element of the amplifier means for that channel and is automatically controlled. As such, the combination of Phinney and Odom includes the dynamic control means controlling individual elements of the amplifier means.

Regarding Claim 30, all elements of Claim 30 are comprehended by Claim 1. As such, the combination of Phinney and Odom makes obvious all elements of Claim 30.

Regarding Claim 108, all elements of Claim 108 are comprehended by Claim 29. As such, the combination of Phinney and Odom makes obvious all elements of Claim 108.

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Regarding Claim 109, all elements of Claim 109 are comprehended by Claim 108. As such, the combination of Phinney and Odom makes obvious all elements of Claim 109.

Claims 56 through 63, 69, 82 through 89 and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phinney in view of Odom and further in view of Herleman et al. (US Patent 3,540,545).

Regarding Claim 56, Phinney further discloses sound sources having different sonic characteristics (page 2, lines 20-26). Therefore, the combination of Phinney and Odom makes obvious all elements except loudspeaker means customized according to one or more sonic characteristics of the sounds on its signal path. Herleman discloses a horn speaker customized according to the sonic characteristics of the sounds it reproduces (column 3, line 69 through column 4, line 5). Herleman further discloses the suitability of the customized speaker in reproducing recorded and live performances (column 4, lines 26-33). It would have been obvious to one skilled in the art at the time of the invention to apply the use of customized loudspeakers as taught by Herleman to the combination made obvious by Phinney and Odom for the purpose of better simulating the sound of a particular instrument.

Regarding Claim 57, Herleman further discloses customizing the speaker according to frequency range (column 3, line 73 through column 4, line 2).

Regarding Claim 58, Herleman further discloses customizing the speaker according to directional characteristics (column 3, lines 69-72).

Regarding Claim 59, Herleman further discloses customizing the speaker according to frequency range (column 3, line 73 through column 4, line 2) and directional characteristics (column 3, lines 69-72).

Regarding Claim 60, Herleman further discloses loudspeaker means comprising two loudspeaker elements (Fig. 1, reference 14, 18; column 2, lines 11-25) and selection of loudspeaker elements (column 4, lines 11-13) based on desired frequency characteristics.

Regarding Claim 61, Herleman further discloses two loudspeaker elements (Fig. 1, reference 14, 18; column 2, lines 11-25) and arrangement of loudspeaker elements (column 4, lines 19-21) based on directivity.

Regarding Claim 62, Herleman further discloses loudspeaker means comprising two loudspeaker elements (Fig. 1, reference 14, 18; column 2, lines 11-25) and selection of loudspeaker elements (column 4, lines 11-13) based on desired frequency characteristics and arrangement of loudspeaker elements (column 4, lines 19-21) based on directivity.

Regarding Claim 63, as shown above apropos of Claim 1, the combination of Phinney and Odom makes obvious all elements except loudspeaker means comprising two or more loudspeaker elements controlled by the dynamic control means. Herleman discloses loudspeaker means comprising two loudspeaker elements (Fig. 1, reference 14, 18; column 2, lines 11-25) and selection of loudspeaker elements (column 4, lines 10-13) by a foot switch. It would have been obvious to one skilled in the art at the time of the invention to apply the controlled use of two loudspeaker elements as taught by Herleman to the combination made obvious by Phinney and Odom for the purpose of more realistic reproducing the sound of certain instruments. Further, Odom discloses interchangeability of control by foot pedal or digital sequencer (i.e.,

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dynamic control means) (column 3, lines 56-61). It would have been obvious to one skilled in the art at the time of the invention to apply external digital control of loudspeaker element selection as taught by Odom to the combination made obvious by Phinney, Odom and Herleman for the purpose of rapidly adapting the system to different environments and providing a convenient way to save and reapply previously saved parameters (Odom: column 2, line 44 through column 3, line 6).

Regarding Claim 69, as shown above apropos of Claim 1, the combination of Phinney and Odom makes obvious amplifier means being under common control and a dynamic control means for individually controlling each of the amplifier means to enable automatic simultaneous control over the amplifier means. Therefore, the combination of Phinney, and Odom makes obvious all elements except loudspeaker means controlled by the dynamic control means. Herleman discloses two loudspeaker elements (Fig. 1, reference 14, 18; column 2, lines 11-25) and selection of loudspeaker elements (column 4, lines 10-13) by a foot switch. It would have been obvious to one skilled in the art at the time of the invention to apply the controlled use of two loudspeaker elements as taught by Herleman to the combination made obvious by Phinney and Odom for the purpose of more realistic reproducing the sound of certain instruments. Further, Odom discloses interchangeability of control by foot pedal or digital sequencer (i.e., dynamic control means) (column 3, lines 56-61). It would have been obvious to one skilled in the art at the time of the invention to apply external digital control of loudspeaker element selection as taught by Odom to the combination made obvious by Phinney, Odom and Herleman for the purpose of rapidly adapting the system to different environments and providing a

convenient way to save and reapply previously saved parameters (Odom: column 2, line 44 through column 3, line 6).

Claims 82 through 89 and 95 are essentially similar to Claims 56 through 63 and 69, respectively, and are rejected on the same grounds.

Claims 67, 68, 70 through 77, 93, 94 and 96 through 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phinney in view of Odom and further in view of Edwards (US Patent 4,422,048).

Regarding Claim 67, Phinney further discloses sound sources producing sounds having different sonic characteristics (page 2, lines 20-26). Therefore, the combination of Phinney and Odom makes obvious all elements except amplifier means customized according to sonic characteristics of audio signals in a signal path. Edwards discloses setting (i.e., customizing) gain (i.e., amplifier means) for each frequency band (i.e., based on characteristics of the audio signals) to be amplified (column 7, lines 40-47). Odom further discloses the desirability of adapting the equalization (i.e., individual channel frequency response) of an audio program that frequently changes venues (column 2, lines 44-59). Phinney discloses use of the recording and reproducing system in conjunction with a motion picture (page 2, lines 115-125). Because motion pictures are projected in theatres with varying configurations and acoustic characteristics, it would have been obvious to one skilled in the art at the time of the invention to apply automatic individual control of audio channel frequency response as taught by Edwards to the combination made obvious by Phinney and Odom for the purpose of adjusting amplifier frequency response smoothly and accurately.

Regarding Claim 68, Phinney further discloses sound sources producing sounds having different sonic characteristics (page 2, lines 20-26). Therefore, the combination of Phinney and Odom makes obvious all elements except each amplifier means customized according to sonic characteristics of audio signals in a signal path. Edwards discloses setting (i.e., customizing) gain (i.e., amplifier means) for each frequency band (i.e., based on characteristics of the audio signals) to be amplified (column 7, lines 40-47). Odom further discloses the desirability of adapting the equalization (i.e., individual channel frequency response) of an audio program that frequently changes venues (column 2, lines 44-59). Phinney discloses use of the recording and reproducing system in conjunction with a motion picture (page 2, lines 115-125). Because motion pictures are projected in theatres with varying configurations and acoustic characteristics, it would have been obvious to one skilled in the art at the time of the invention to apply the frequency response controller taught by Edwards to each amplifier in the combination made obvious by Phinney and Odom for the purpose of adjusting amplifier frequency response smoothly and accurately.

Regarding Claim 70, as shown above apropos of Claim 1, the combination of Phinney and Odom makes obvious all elements except the amplifier means comprising more than one amplifier element in a signal path. Edwards discloses a frequency response controller for an audio signal path (Fig. 3; column 1, lines 46-53) comprising a plurality of amplifier elements (Fig. 3, reference 22a-j, 39a-j; column 7, lines 59-65; column 9, lines 1-2). Odom further discloses the desirability of adapting the equalization (i.e., individual channel frequency response) of an audio program that frequently changes venues (column 2, lines 44-59). Phinney discloses use of the recording and reproducing system in conjunction with a motion picture (page

2, lines 115-125). Because motion pictures are projected in theatres with varying configurations and acoustic characteristics, it would have been obvious to one skilled in the art at the time of the invention to apply the frequency response controller comprising more than one amplifier in a signal path as taught by Edwards to the combination made obvious by Phinney and Odom for the purpose of adjusting amplifier frequency response smoothly and accurately.

Regarding Claim 71, Edwards further discloses setting (i.e., customizing) gain (i.e., amplifier elements) for each frequency band (i.e., based on characteristics of the audio signals) to be amplified (column 7, lines 40-47).

Regarding Claim 72, Edwards further discloses external control of frequency response (i.e., amplifier elements separately controllable by the dynamic control means) (Figs. 5, 6; column 11 lines 47-52).

Regarding Claim 73, Edwards further discloses more than one group of amplifier elements (Fig. 3, references 22a and 39a, 22b and 39b, 22c and 39c, 22j and 39j) for each signal path.

Regarding Claim 74, Edwards further discloses setting (i.e., customizing) gain (i.e., amplifier elements) for the pair (i.e., group) of amplifier elements for each frequency band (i.e., based on characteristics of the audio signals) to be amplified (column 7, lines 40-47).

Regarding Claim 75, Edwards further discloses external control of frequency response (i.e., groups of amplifier elements separately controllable by the dynamic controller) (Figs. 5, 6; column 11 lines 47-52).

Regarding Claim 76, as shown above apropos of Claim 71, the combination of Phinney, Odom and Edwards is shown to make obvious all elements except amplifier elements separately controllable by the dynamic control means. Edwards further discloses external control of

frequency response (i.e., amplifier elements separately controllable by the dynamic control means) (Figs. 5, 6; column 11 lines 47-52).

Regarding Claim 77, as shown above apropos of Claim 74, the combination of Phinney, Odom and Edwards is shown to make obvious all elements except groups of amplifier elements separately controllable by the dynamic control means. Edwards further discloses external control of frequency response (i.e., groups of amplifier elements separately controllable by the dynamic control means) (Figs. 5, 6; column 11 lines 47-52).

Claims 93, 94 and 96 through 103 are essentially similar to Claims 67, 68 and 70 through 77, respectively, and are rejected on the same grounds.

Claims 80 and 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phinney in view of Odom and further in view of Edwards and further in view of Herleman.

Regarding Claim 80, as shown above apropos of Claim 76, the combination of Phinney, Odom and Edwards is shown to make obvious all elements except sound sources having different sonic characteristics and loudspeaker means customized according to one or more sonic characteristics of the sounds on its signal path. Phinney further discloses sound sources having different sonic characteristics (page 2, lines 20-26). Therefore, the combination of Phinney, Odom and Edwards makes obvious all elements except loudspeaker means customized according to one or more sonic characteristics of the sounds on its signal path. Herleman discloses a horn speaker customized according to the sonic characteristics of the sounds it reproduces (column 3, line 69 through column 4, line 5). Herleman further discloses that the use of such a loudspeaker is highly desirable (column 4, lines 2-5). It would have been obvious to one skilled in the art at the

time of the invention to apply the use of customized loudspeakers as taught by Herleman to the combination made obvious by Phinney, Odom and Edwards for the purpose of better simulating the sound of a particular instrument.

Claim 106 is essentially similar to Claim 80 and is rejected on the same grounds.

Claims 64, 65, 81, 90, 91 and 107 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phinney in view of Odom as applied to Claim 1 above, and further in view of Camras (US Patent 3,158,695).

Regarding Claim 64, as shown above apropos of Claim 1, the combination of Phinney and Odom makes obvious all elements except means for enabling a user to elect to intentionally group together audio signals from two or more sound sources for playback over a common signal path. Camras discloses an audio recording and reproducing system that uses a plurality of microphones to each record a distinct audio track (Fig. 2; column 2, lines 58-63) and a plurality of loudspeakers with similar spatial arrangement to the microphones, each used to reproduce the audio track of the corresponding microphone (Fig. 3, column 3, lines 4-6). Camras discloses combining sound patterns received by different microphones and recorded on separate channels for connection to a single loudspeaker (Fig. 5; column 6, lines 45-64). Camras further discloses that combining a plurality of separately recorded and stored audio channels for playback on a common signal path can achieve a more economical playback system (column 7, lines 5-8). It would have been obvious to one skilled in the art at the time of the invention to apply signal grouping as taught by Camras to the combination made obvious by Phinney and Odom for the purpose of utilizing the recording in a more economical playback system.

Regarding Claim 65, Phinney further discloses separate storage of sound sources (page 2, lines 46-53; Fig. 1, reference 17, 17'). Therefore, the combination of Phinney and Odom makes obvious all elements except intentional playback over a common signal path. Camras discloses combining sound patterns received by different microphones and recorded on separate channels for connection to a single loudspeaker (Fig. 5; column 6, lines 45-64). Camras further discloses that combining a plurality of separately recorded and stored audio channels for playback on a common signal path can achieve a more economical playback system (column 7, lines 5-8). It would have been obvious to one skilled in the art at the time of the invention to apply playback over a common signal path as taught by Camras to the combination made obvious by Phinney and Odom for the purpose of utilizing the recording in a more economical playback system.

Regarding Claim 81, Phinney further discloses the use of any form of electromechanical recorder (page 2, lines 52-54). Therefore, the combination of Phinney and Odom makes obvious all elements except the audio signals stored on a common recording medium. Camras discloses recording (i.e., storing) a plurality of unmixed audio signals on the same (i.e., a common) recording medium (Figs. 2-3, reference 35; column 2, lines 58-71). Phinney further discloses the need to synchronize the recording and reproducing of the different signals (page 2, lines 55-61, 98-101). It would have been obvious to one skilled in the art at the time of the invention to apply the common recording medium taught by Camras to the combination made obvious by Phinney and Odom for the purpose of simplifying the synchronization of the separate signals.

Claims 90, 91 and 107 are essentially similar to Claims 64, 65 and 81, respectively, and are rejected on the same grounds.

Claims 66 and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phinney in view of Odom as applied to Claim 1 above, and further in view of Ariga et al. (US Patent 4,408,095).

Regarding Claim 66, as shown above apropos of Claim 1, the combination of Phinney and Odom makes obvious all elements except that two or more sound sources having similar characteristics may be separately received, converted and stored, but intentionally mixed together during playback and passed through a common loudspeaker means. Ariga discloses an acoustic apparatus (Fig.; column 1, lines 40-42, 62-64) in which low frequency sounds (i.e., having similar characteristics) from separate channels (i.e., separately received, converted and stored) are mixed together during playback and passed through a common loudspeaker (Fig. 1, reference 12; column 2, lines 29-33). Ariga further discloses that cost can be reduced through this practice (column 2, lines 42-43). It would have been obvious to one skilled in the art at the time of the invention to apply mixing of signals with similar sonic characteristics as taught by Ariga to the combination made obvious by Phinney and Odom for the purpose of improving reproduction and reducing cost.

Claim 92 is essentially similar to Claim 66 and is rejected on the same grounds.

Claims 78, 79, 104 and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phinney in view of Odom as applied to Claim 1 above, and further in view of de Koning et al. (US Patent 4,481,660).

Regarding Claim 78, as shown above apropos of Claim 1, the combination of Phinney and Odom makes obvious all elements except amplifier means comprising more than one amplifier

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element and the dynamic control means selectively turning on or off individual amplifier elements. De Koning discloses an amplifier system comprising a plurality of amplifier elements (Fig. 3, reference 3.1, 6.1-6.k; column 6, lines 52-60) that are selectively turned on and off by switches (Fig. 3, reference 8, 9) under control of a measuring unit (i.e., dynamic control means) (Fig. 3, reference 10). De Koning further discloses that total power requirements can be reduced in this way (column 2, lines 3-9). It would have been obvious to one skilled in the art at the time of the invention to apply controlled amplifier elements as taught by de Koning to the combination made obvious by Phinney and Odom for the purpose of reducing amplifier power demand.

Regarding Claim 79, as shown above apropos of Claim 1, the combination of Phinney and Odom makes obvious all elements except amplifier means comprising more than one group of amplifier elements and the dynamic control means selectively turning on or off individual amplifier elements within a group. De Koning discloses an amplifier system comprising a plurality of groups of amplifier elements (Fig. 3, reference 3.1, 6.1-6.k; Fig. 4, reference 17, 18, 20; column 6, lines 52-60; column 7, lines 10-12) that include measuring amplifier elements and are selectively turned on and off by switches (Fig. 3, reference 8, 9) under control of a measuring unit (i.e., dynamic control means) (Fig. 3, reference 10). De Koning further discloses that total power requirements can be reduced in this way (column 2, lines 3-9). It would have been obvious to one skilled in the art at the time of the invention to apply controlled groups of amplifier elements as taught by de Koning to the combination made obvious by Phinney and Odom for the purpose of reducing amplifier power demand.

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Claims 104 and 105 are essentially similar to Claims 78 and 79 respectively and are rejected on the same grounds.

(11) Response to Argument

Appellant's arguments are largely based on reading claim limitations narrowly and incorrect applications of the concepts of analogous art and field of endeavor. For convenience, examiner follows the structure of headings and subheadings in the Argument section of the Appeal Brief.

A. Alleged Deficiencies in the References

Under heading A. of the Argument section of the Appeal Brief, appellant makes allegations relating to the Phinney and Odom references used to reject the independent claims.

1. US Patent 1,765,735 to Phinney

Under subheading 1., appellant makes two allegations regarding the Phinney reference.

a. Sound Capture

The first allegation, made under sub-subheading a. is summarized by appellant as follows: "Phinney relates to capturing sounds from sections of an orchestra, not individual instruments". Examiner has carefully reviewed the independent claims for a recitation regarding capturing sounds from individual instruments and has found none. The claims make the broad recitation "sound sources". A "sound source" can refer to an entire orchestra, a section of an orchestra, an individual instrument, or even a single string on an individual instrument.

Appellant's allegation that "a sound source" and "an individual instrument" are equivalent

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recitations is, therefore, incorrect. Since this incorrect equivalence is the basis of appellant's argument, the argument is clearly incorrect. It should be further noted that the claims do not necessarily require a one-to-one correspondence between the receiving means, the sound sources, the converting means and the audio signals. For example, a large orchestra comprises a plurality of sound sources. Three microphones placed a distance apart from one another would, due to their spatial separation, pick up different sounds. As such, the microphones would be "separately receiving sounds produced by a plurality of sound sources". Further, the microphones would be "converting the separately received sounds to a plurality [in this case three] of separate audio signals". While appellant's disclosure and arguments are based on an embodiment in which there is a one-to-one correspondence between sound sources, microphones, recordings, amplifiers, loudspeakers, etc. and, in the interest of compact prosecution, examiner has cited a reference that also has these attributes, it should be noted that it is not required by the claim.

b. Amplifier and Loudspeaker Networks

The second allegation, made under sub-subheading b. is summarized by appellant as follows: "Phinney fails to disclose an amplification network or a loudspeaker network". Appellant's allegation is based on an improperly restrictive reading of the term "network", which is a broad term with many meanings. Merriam-Webster's Ninth Collegiate Dictionary defines a network as "an interconnected or interrelated chain, group, or system". In this case, the amplifiers and loudspeakers disclosed by Phinney are interrelated because they are used together for a common purpose and, therefore, constitute networks. Appellant goes on to make a piecemeal attack on the reference for not disclosing common control of the amplifiers. The

claim rejections clearly show that common control is taught by Odom. Further, the combination of Phinney and Odom makes obvious common control of the amplifiers, thus making obvious the "amplification network" even under appellant's improperly narrow interpretation of "network".

Appellant goes on to allege that "Phinney provides no teaching or suggestion of amplifier or loudspeaker means having multiple amplifier or loudspeaker elements within each channel". None of the independent claims includes a limitation requiring "amplifier or loudspeaker means having multiple amplifier or loudspeaker elements within each channel". The closest recitation is in Claim 29: "... each of the amplifier means comprising one or more amplifier elements". As such, an amplifier means comprising a single amplifier element meets the claim since the number of elements can be "one or more", expressed in the alternative. Again, appellant has chosen to make an improperly narrow interpretation of the claim. To the extent that appellant makes allegations regarding multiple elements of amplifier or loudspeaker means in the dependent claims, these allegations are shown to be incorrect in the corresponding sections below.

Similarly, the customization of loudspeakers and amplifiers is not claimed in the independent claims and to the extent that appellant makes allegations regarding such customizations, these allegations are shown to be incorrect in the corresponding sections below.

2. US Patent 5,740,260 to Odom

Under subheading 2., appellant makes three allegations regarding the Phinney reference: that Odom is not analogous art; that the suggestion to combine Odom and Phinney is inadequate; and that in combination Phinney and Odom fail to disclose all claim elements. Appellant goes

on to incorrectly allege that Odom “does not teach or suggest dynamically controlling individual amplifier or loudspeaker elements”. As is clearly shown in Fig. 1 of Odom, a micro-controller system (20) provides control inputs to a plurality of audio channel units (40, 42, 44), each of which controls parameters on an “audio in” signal to produce an “audio out” signal. Odom discloses that these parameters include controlling signal volume (column 6, lines 30-36). Odom further discloses that this control can be automated according to a digital sequencer to provide real-time control over the parameters (column 9, lines 40-45). Further, Odom discloses that the volume control is achieved by controlling a voltage controlled amplifier (column 7, lines 31-37). As such, Odom discloses dynamically controlling amplifier elements for the purpose of creating and maintaining a setup in a multi-channel audio reproduction environment. Odom discloses that this capability is important in “public address systems, or other environments where it is necessary to recall audio parameter setups such as volume” (column 2, lines 56-57). As such, Odom provides suggestion for the use in any multi-channel audio system where setup parameters are important. Since Phinney is concerned with producing a realistic listening experience, such setup is desirable and therefore, there is suggestion to combine Odom and Phinney. Appellant goes on to allege that in Odom “processing is done in sequential bins, not simultaneously”. As is shown in Figs. 2 and 3 in Odom and described between column 7, line 54 and column 8, line 16, the control parameters are constantly updated at an overall rate sufficiently fast so that the control voltage for each parameter in every channel is maintained between updates. As such, while updating is sequential, control is constant and simultaneous for all channels.

a. Analogous Art

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The first allegation, made under sub-subheading a. is summarized by appellant as follows: "Odom is not analogous art to the claimed invention". While appellant admits that "if the reference is within the inventor's field of endeavor, then it is deemed analogous", appellant goes on to allege: "The field of endeavor of various ones of the claims relates to providing a system capable of capturing sound from a plurality of individual sound sources and reproducing these sounds separately, without mixing, providing separate amplifiers and/or loudspeakers for each sound source that can be customized based on characteristics of sounds from the source and providing a common dynamic control for these elements, among other things." As such, appellant essentially represents that the field of endeavor of the claimed invention is limited to the claimed invention itself. If this were possible, there would be no situation where obviousness could be shown because any reference that did not anticipate the claimed invention would be outside the claimed invention's field of endeavor. Examiner maintains that the field of endeavor of the claimed invention is properly characterized as the recording and/or reproduction of sound. As such, a control device that controls parameters in multiple audio channels falls within the field of endeavor of the claimed invention. Appellant further admits that "if the reference is reasonably pertinent to a particular problem with which the inventor was involved, it is analogous art". Appellant characterizes the "problems with which the inventor was involved" as including "inability to provide individual customized control over reproduced sounds". As such, a control device that controls parameters in multiple audio channels is reasonably pertinent to the particular problem with which the inventor was involved, especially in light of the multiple audio channel system disclosed by Phinney.

b. Suggestion to Combine

The second allegation, made under sub-subheading b., is summarized by appellant as follows: "There is no proper suggestion to combine Phinney and Odom". As stated above in the grounds of rejection, Phinney discloses use of the recording and reproducing system in conjunction with a motion picture (page 2, lines 115-125). Because motion pictures are projected in theatres with varying configurations and acoustic characteristics, it would have been obvious to one skilled in the art at the time of the invention to apply automatic individual control of audio channel volume as taught by Odom to the recording and reproducing system taught by Phinney for the purpose of rapidly adapting the system to different locations and providing a convenient way to save and reapply previously saved parameters for a particular location (Odom: column 2, line 44 through column 3, line 6). Appellant alleges that "Phinney does not teach or suggest this to adapt to different theatres". Because it was well known to present a motion picture in different theatres, it is not necessary that this teaching be provided by Phinney. Appellant further alleges that "Odom does not teach or suggest the use of his invention in movie theatres with varying configurations". Odom discloses that "the ability to recall previous parameter settings is important in many situations encountered in small or large recording studios, public address systems, or other environments where it is necessary to recall audio parameter setups such as volume, mute, compression, noise gating, or equalization, among others" and suggests the use of the control device for "bands and speakers on a tour schedule". In a similar manner to a band or speaker on a tour schedule, a motion picture travels from theatre to theatre, frequently arriving only a short time before its scheduled showing. As such, an automated audio control device is similarly applicable to motion pictures that utilize a plurality of audio channels.

3. Claim Elements

Under subheading 3., appellant summarizes allegations as “even if combined, Phinney and Odom do not disclose every recitation of the claims”. Appellant goes on to specify alleged deficiencies of teachings of: separately capturing sounds from individual sound sources; an amplification network, a loudspeaker network; and common automatic and simultaneous dynamic control. As shown above, these teachings are all present in Phinney or Odom.

B. Independent Claims 1, 29, 30, 108 and 109

Under heading B, regarding **Claim 1**, appellant repeats the same allegations made under heading A. These allegations are shown above to be incorrect.

Still under heading B, regarding **Claim 29**, appellant makes the additional allegation that “[neither] of these references contemplate that separate amplifier means in the separate signal paths can have one or more amplifier elements”. As shown above, an amplifier means comprising even a single amplifier element meets the claim since the number of elements can be “one or more”, expressed in the alternative in the claim.

Still under heading B, regarding **Claims 30, 108 and 109**, appellant alleges that the claim elements “separately recording each of the audio signals” and “dynamically individually controlling each of the audio signals” are not disclosed by Phinney or Odom. This is incorrect. Phinney clearly discloses separate recording of audio signals: “According to this feature of the invention each individual sound source is provided with a corresponding pick-up and recording mechanism, the pick-up mechanism for each source being substantially unaffected by the other sources” (Fig. 1; page 1, lines 37-42). Similarly, Odom discloses dynamic individual control of

audio signals in a multi-channel environment. Figs. 1, 3 and 4 in Odom clearly show individual control of a plurality of audio channels: 1, 2, ..., m. Odom discloses that compression, compression ratio, muting, volume and noise gating are controlled for each channel (column 6, lines 30-36) and further discloses real time control of parameters under control of a digital sequencer (i.e., dynamic and automatic control) (column 9, lines 40-45). Appellant goes on to allege that “[n]either Phinney nor Odom disclosed separately supplying each of the audio signals to a loud speaker system. Phinney discloses a single loudspeaker channel.” This is incorrect. Fig. 2 in Phinney clearly shows a plurality of loudspeaker channels and discloses that “a plurality of loud speaking devices are provided, each loud speaker being adapted to be operated under control of a corresponding one of the sound records” (page 2, lines 71-74).

C. Other References

Under heading C appellant makes arguments regarding other references cited.

1. US Patent 3,540,545 to Herleman

Under subheading 1 appellant alleges that Herleman is not analogous art by attempting to argue that Herleman is not in the same field of endeavor as the claimed invention. Again, appellant has incorrectly conflated the field of endeavor with the claimed invention itself. As stated above, examiner maintains that the field of endeavor of the claimed invention is the recording and/or reproduction of sound. As such, a “horn speaker which emphasizes certain musical voices and a particular range of tones, corresponding particularly to those of a trumpet or other brass instrument” (Herleman Abstract) is in the same field of endeavor as the claimed invention. Further, Herleman is pertinent to the problems addressed by the claimed invention.

Appellant's original disclosure states: "In practice however, such perfection has not been achieved due to ... deficiencies that exist in the design concept of 'universal' loudspeakers" (page 3, lines 13-16). As such, it is clear that at least one of the problems with which the inventor was involved was the inability of general-purpose loudspeakers to produce certain sounds. The horn speaker disclosed by Herleman provides "more power in the mid range and treble, and provides better transient response. A sharper attack is thus possible, and the original harmonic structure is altered, thus better to simulate a brass wind instrument, and to produce the highly desirable brass solo effect" (column 4, lines 1-5). As such, the horn speaker of Herleman is pertinent to the problem of overcoming "deficiencies that exist in the design concept of 'universal' loudspeakers". Still under subheading 1, appellant goes on to allege, without evidence or argument, that there is not a proper suggestion to combine Herleman with the base references. This is incorrect. As stated above in the grounds of rejection, Herleman teaches that a specialized loudspeaker can better reproduce the sound of a specific instrument or class of instruments. This teaching is directly applicable to the system taught by Phinney, which teaches the separate recording and reproduction of particular instruments or classes of instruments. As such, the suggestion to combine is present for the purpose of providing better sound reproduction.

2. US Patent 4,442,048 to Edwards

Under subheading 2, appellant alleges that Edwards is not analogous art by attempting to argue that Edwards is not in the same field of endeavor as the claimed invention. Again, appellant has incorrectly conflated the field of endeavor with the claimed invention itself. As stated above, examiner maintains that the field of endeavor of the claimed invention is the

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recording and/or reproduction of sound. As such, a device “to equalize system frequency response by compensating for frequency response aberrations of other devices in the audio signal processing chain” (column 1, lines 14-17) is in the same field of endeavor as the claimed invention. Further, Edwards is pertinent to the problems addressed by the claimed invention. Appellant’s original disclosure states: “However, real sounds and musical signals are actually complex waves made up of many sound waves of different frequencies superimposed on one another” (page 2, lines 3-6). As such, a device “to equalize system frequency response by compensating for frequency response aberrations of other devices in the audio signal processing chain” (column 1, lines 14-17) is pertinent to the problem of reproducing “real sounds and musical signals [that] are actually complex waves made up of many sound waves of different frequencies superimposed on one another”. Still under subheading 2., appellant goes on to allege without argument or evidence that there is not proper suggestion to combine Edwards with Phinney and Odom. This is incorrect. Edwards discloses a device “to equalize system frequency response by compensating for frequency response aberrations of other devices in the audio signal processing chain” (column 1, lines 14-17). As such, one skilled in the art would have motivation to employ such a device in any audio system having a signal processing chain. This clearly applies to the combination of Phinney and Odom in which each channel has a signal processing chain comprising at least an amplifier and a channel processor. Still under subheading 2., appellant goes on to allege without argument or evidence that “various claim elements are still missing”. To the extent that appellant provides argument or evidence of missing claim elements in subsequent sections of the arguments, examiner responds in corresponding sections of this Answer.

3. US Patent 3,158,695 to Camras

Under subheading 3. appellant alleges that Camras is not analogous art by attempting to argue that Camras is not in the same field of endeavor as the claimed invention. Again, appellant has incorrectly conflated the field of endeavor with the claimed invention itself. As stated above, examiner maintains that the field of endeavor of the claimed invention is the recording and/or reproduction of sound. As such, a system “to provide a multi-channel sound record capable of producing maximum realism of reproduction of sound which has been recorded in relatively large volume and is to be played back in a relatively small volume” (column 1, lines 66-70) is in the same field of endeavor as the claimed invention. Further, Camras is pertinent to the problems addressed by the claimed invention. Appellant’s original disclosure states that “[s]ound staging is the phenomena that enables a listener to perceive the apparent physical size and location of a musical presentation” (page 3, lines 21-23). As such, a system by which “[t]he listener can then move freely within wide boundaries and experience the same sound sensation as in the original location, with loudness, phase and other relations being correct” (Camras: column 1, lines 55-58) is pertinent to the problem of staging. Still under subheading 3., appellant goes on to allege without argument or evidence that there is not proper suggestion to combine Camras with Phinney and Odom. This is incorrect. As stated above in the grounds of rejection, Camras discloses combining sound patterns received by different microphones and recorded on separate channels for connection to a single loudspeaker (Fig. 5; column 6, lines 45-64). Camras further discloses that combining a plurality of separately recorded and stored audio channels for playback on a common signal path can achieve a more economical playback system (column 7, lines 5-8). As such there is suggestion to combine. Still under subheading 3., appellant goes on

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to allege without argument or evidence that “various claim elements are still missing”. To the extent that appellant provides argument or evidence of missing claim elements in subsequent sections of the arguments, examiner responds in corresponding sections of this Answer.

4. US Patent 4,408,095 to Ariga

Under subheading 4. appellant alleges that Ariga is not analogous art by attempting to argue that Ariga is not in the same field of endeavor as the claimed invention. Again, appellant has incorrectly conflated the field of endeavor with the claimed invention itself. As stated above, examiner maintains that the field of endeavor of the claimed invention is the recording and/or reproduction of sound. As such an apparatus for reproducing music (column 1, lines 17-20) is in the same field of endeavor as the claimed invention. Further, Ariga is pertinent to the problems addressed by the claimed invention. Appellant admits that one of the problems addressed by the claimed invention is masking. Ariga discloses that “[t]he problem caused due to the masking of the low-frequency sound can thus be solved” through the use of the disclosed apparatus (column 2, lines 19-20). Still under subheading 4., appellant goes on to allege without argument or evidence that there is not proper suggestion to combine Ariga with Phinney and Odom. This is incorrect. As stated above in the grounds of rejection, Ariga discloses an acoustic apparatus (Fig.; column 1, lines 40-42, 62-64) in which low frequency sounds (i.e., having similar characteristics) from separate channels (i.e., separately received, converted and stored) are mixed together during playback and passed through a common loudspeaker (Fig. 1, reference 12; column 2, lines 29-33). Ariga further discloses that cost can be reduced through this practice (column 2, lines 42-43). As such, there is suggestion to combine. Still under subheading 4., appellant goes on to allege without argument or evidence that “various claim elements are still

missing". To the extent that appellant provides argument or evidence of missing claim elements in subsequent sections of the arguments, examiner responds in corresponding sections of this Answer.

5. US Patent 4,481,660 to de Koning

Under subheading 5. appellant alleges that de Koning is not analogous art by attempting to argue that de Koning is not in the same field of endeavor as the claimed invention. Again, appellant has incorrectly conflated the field of endeavor with the claimed invention itself. As stated above, examiner maintains that the field of endeavor of the claimed invention is the recording and/or reproduction of sound. As such an apparatus for efficient driving a plurality of loudspeakers from a plurality of signal sources (column 1, lines 5-15) is in the same field of endeavor as the claimed invention. Further, de Koning is pertinent to the problems addressed by the claimed invention. Appellants disclosure discloses that it is an object of the invention "to take into account power variations of the various signals" (page 7, lines 10-13). De Koning discloses that "[t]he idea of the invention is based on recognition of the fact that, by arranging a plurality of auxiliary amplifier units in parallel with a number of fixed amplifier units, which auxiliary amplifier units may each be connected in parallel with an arbitrary amplifier unit, the total power installed in the apparatus can be reduced significantly" (column 2, lines 3-9). As such, de Koning teaches adjusting amplifier capacity of a given channel in accordance with variation of power required in the channel. Still under subheading 5., appellant goes on to allege without argument or evidence that there is not proper suggestion to combine de Koning with Phinney and Odom. This is incorrect. As stated above in the grounds of rejection, de Koning discloses an amplifier system comprising a plurality of amplifier elements (Fig. 3, reference 3.1,

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6.1-6.k; column 6, lines 52-60) that are selectively turned on and off by switches (Fig. 3, reference 8, 9) under control of a measuring unit (Fig. 3, reference 10). De Koning further discloses that total power requirements can be reduced in this way (column 2, lines 3-9). It would have been obvious to one skilled in the art at the time of the invention to apply controlled amplifier elements as taught by de Koning to the combination made obvious by Phinney and Odom for the purpose of reducing amplifier power demand. Still under subheading 5., appellant goes on to allege without argument or evidence that "various claim elements are still missing". To the extent that appellant provides argument or evidence of missing claim elements in subsequent sections of the arguments, examiner responds in corresponding sections of this Answer.

D. Claims 56 through 63, 69, 82 through 89 and 95

Under heading D. appellant makes arguments regarding Claims 56 through 63, 69, 82 through 89 and 95.

1. Odom and Herleman as Analogous Art

Under subheading 1. appellant alleges that neither Odom nor Herleman are analogous art. As shown above under headings A.2. and C.1., Odom and Herleman are analogous art.

2. Suggestion to combine Phinney, Odom and Herleman

Under subheading 2. appellant alleges there is no motivation to make the combination. This is incorrect. As stated above in the grounds of rejection, Herleman teaches that a specialized loudspeaker can better reproduce the sound of a specific instrument or class of instruments (column 4, lines 26-33). This teaching is directly applicable to the system taught by

Phinney, which teaches the separate recording and reproduction of particular instruments or classes of instruments. As such, the suggestion to combine is present for the purpose of providing better sound reproduction. Appellant alleges that Herleman teaches away from the claimed invention. This is incorrect. There is nothing in Herleman that indicates the unsuitability of the use of a customized loudspeaker in a multichannel audio system. Appellant further alleges that “the invention contemplates a separate loudspeaker system per channel, with each channel corresponding to separate sound sources, and the customization of the loudspeakers based on the sonic characteristics of the sound sources. Herleman does not come close to this.” Appellant appears to be attempting to refute an anticipation rejection based on Herleman alone. As shown above in the grounds of rejection, Phinney is relied upon for the teaching of “a separate loudspeaker system per channel, with each channel corresponding to separate sound sources” and Herleman teaches “the customization of the loudspeakers based on the sonic characteristics of the sound sources”.

3. Claim Elements

Under subheading 3. appellant makes allegations regarding claim elements.

Claims 56 through 59

Regarding Claim 56 appellant alleges that Herleman fails to disclose “each of said loudspeaker means is customized”. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In this case, the teaching in Herleman of the desirability of applying a

customized loudspeaker to an audio channel is applicable to each channel in the combination of Phinney and Odom.

Regarding Claims 57 through 59, appellant alleges that the additional limitations of these claims (i.e., loudspeaker customization by frequency range and/or directivity pattern) are not taught by the references cited. This is incorrect. As stated above in the grounds of rejection, Herleman discloses customizing the speaker according to frequency range: “The horn speaker has a smooth, rising response between 250 cycles and 15,000 cycles. The horn speaker provides more power in the mid range and treble, and provides better transient response. A sharper attack thus is possible, and the original harmonic structure is altered, thus better to simulate a brass wind instrument, and to produce the highly desirable brass solo effect” (column 3, line 73 through column 4, line 2) and directional characteristics: “This, coupled with the brass wind type of formant effect of the horn itself, and with the beaming or directional characteristics thereof, make the sound from the horn speaker truly distinctive” (column 3, lines 69-72).

Claims 60 through 62

Regarding Claim 60, appellant alleges that the cited references fail to teach “at least one of the loudspeaker means comprises two or more loudspeaker elements and that the loudspeaker means is customized by selecting loudspeaker elements based on frequency characteristics of the sounds to be reproduced by the loudspeaker means”. This is incorrect. As is clearly shown in Figs. 1 and 2, Herleman discloses loudspeaker means comprising two elements: a speaker system (reference 14) and a horn speaker (reference 18). As such, appellant is incorrect in ascribing confusion to examiner. Herleman further discloses using a switch (reference 16) to select the

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horn speaker (column 1, line 73 through column 2, line 2) when its particular frequency response is desired (column 3, line 73 through column 4, line 2).

Regarding Claim 61, appellant alleges that the cited references further fail to teach “customizing loudspeaker elements based on directivity pattern characteristics”. This is incorrect. Herleman further discloses using a horn speaker with particular directivity pattern characteristics (column 3, lines 69-72).

Regarding Claim 62, appellant alleges that the cited references further fail to teach “customizing loudspeaker elements based on both frequency characteristics and directivity patterns”. This is incorrect. Herleman further discloses using a horn speaker with particular frequency characteristics (column 3, line 73 through column 4, line 2) and directivity patterns (column 3, lines 69-72).

Claim 63

Regarding Claim 63, appellant again incorrectly ascribes confusion to examiner. The correspondence between the claimed “loudspeaker elements” and the disclosed horn speaker and speaker system is clear. As such, Herleman teaches control of these elements by a footswitch. To automate this control is obvious. Broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art (*In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)). Further, Odom teaches that control by foot pedal can be replaced by a digital sequencer (column 3, lines 56-61). Appellant further alleges that “Odom does not disclose controlling loudspeaker elements”. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must

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be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In this case, as shown above, the controlling of loudspeaker elements is taught by Herleman. Further, it is clear from Herleman that this control is exercised selectively during a performance (column 4, lines 11-13) (i.e., dynamically). Again, in light of the device disclosed by Odom in the combination, the automation of the manual process of dynamically controlling the loudspeaker elements is obvious.

Claim 69

Regarding Claim 69, appellant refers back to arguments regarding Claim 1 to allege that Phinney and Odom fail to make obvious amplifier means under common dynamic control. Examiner has responded to these allegations above. Appellant goes on to allege that Herleman fails to teach dynamic control of loudspeaker means. As shown above apropos of Claim 63, Herleman teaches dynamic control of loudspeaker elements. Further, since the loudspeaker elements comprise the loudspeaker means, control of the former is necessarily control of the latter. Appellant further alleges that Herleman fails to disclose automatic simultaneous control and that Herleman fails to disclose controlling amplifier elements while Odom fails to disclose controlling loudspeakers. In the grounds of rejection and in the above responses examiner has shown the teachings in the cited references for all the claim elements. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claims 82 through 89 and 95

Regarding Claims 82 through 89 and 95, appellant refers back to arguments regarding Claims 56 through 63 and 95 to allege that Phinney, Odom and Herleman fail to make obvious the claim elements. Examiner has responded to these allegations above.

E. Claims 67, 68, 70 through 77, 93, 94 and 96 through 103

Claims 67 and 68

Regarding Claims 67 and 68, appellant alleges that “Edwards does not teach or suggest customizing amplification means based on characteristics of an audio signal on its signal path”. This is incorrect. Edwards discloses that the disclosed controller is used for “compensating for frequency response aberrations of other devices in the audio signal processing chain” (column 1, lines 15-17). The controller disclosed by Edwards provides a control range from +12 dB to -12 dB in each of ten frequency bands (column 7, lines 40-46). As such, when used in conjunction with the combination of Phinney and Odom, the controller disclosed by Edwards forms an element or elements of the amplification means and is customized to compensate for frequency response aberrations of other devices in the audio signal processing chain. This includes the sound sources themselves. As such, the controller disclosed by Edwards is customized according to sonic characteristics of the sounds in the signal paths. Appellant makes further arguments based on an improperly narrow interpretation of the term “amplifier elements” as used in the claims. “Element” is an extremely broad term. The ninth edition of Merriam Webster’s New Collegiate dictionary defines “element” as “a constituent part”. Because the controller disclosed by Edwards provides up to 12 dB of gain, it is a constituent part of the amplification

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means and, therefore, an element thereof. Similarly, the components of the controller disclosed by Edwards are also constituent parts of the amplification means and constitute elements thereof.

Claims 72 and 75

Regarding Claims 72 and 75, appellant repeats the allegation that the controller disclosed by Edwards does not provide amplification. As stated above apropos of Claims 67 and 68, the controller of Edwards provides amplification. Further, Edwards discloses an embodiment that provides “only gain increase” (column 6, lines 25-26). As such, the components of the controller disclosed by Edwards are amplifier elements. Appellant goes on to allege that “neither Phinney, Odom, nor Edwards disclose dynamic control over individual amplifier elements”. This is incorrect. Edwards discloses implementation “using external control means (either analog or digital) to control the variable transfer function means used to set system response”. It is important to note that Claims 72 and 75 do not claim the amplifier elements are controlled by dynamic control means, only that they are controllable by dynamic control means.

Claims 76 and 77

Regarding Claims 76 and 77, appellant’s arguments are essentially similar to those made regarding Claims 72 and 75 and are incorrect for reasons stated above apropos of those claims.

Claims 93, 94 and 96 through 103

Regarding Claims 93, 94 and 96 through 103, appellant refers back to arguments made regarding Claims 67, 68 and 70 through 77. These arguments are incorrect for reasons stated above apropos of those claims.

F. Claims 80 and 106

Regarding Claims 80 and 106, appellant repeats arguments made above under heading D. regarding the Herleman reference. These arguments are incorrect for reasons stated above in the corresponding section of this Answer.

G. Claims 64, 65, 81, 90, 91, 107

Claim 64

Regarding Claim 64, appellant first argues the claim is patentable due to dependence from Claim 1. This is incorrect. As shown above apropos of Claim 1, that claim is not patentable. Appellant goes on to allege that Camras fails to disclose grouping signals from separate sound sources. This is a piecemeal attack on the references. As shown above in the grounds of rejection, Phinney discloses maintaining separate channels for separate sound sources. Camras is relied upon for the teaching of combining separate audio signals for playback over a common path for the purpose of making a more economical playback system.

Claim 65

Regarding Claim 65, appellant's arguments are essentially similar to those made regarding Claim 64 and are incorrect for reasons stated above apropos of that claim.

Claim 81

Regarding Claim 81, appellant makes another piecemeal attack on the references. The claim claims storing the audio signals on a common recording medium. Phinney discloses use of a separate disk for each signal. Camras discloses recording a plurality of audio signals on separate tracks of a magnetic tape (i.e., a common medium). The use of the tape greatly

simplifies the synchronization of the separate signals for playback. As such, one skilled in the art would have been motivated to make the combination.

Claims 90, 91 and 107

Regarding Claims 90, 91 and 107, appellant refers back to arguments made apropos of Claims 64, 65 and 81. These arguments are incorrect for reasons stated above in the corresponding section of this Answer.

H. Claims 66 and 92

Regarding Claims 66 and 92, appellant again makes a piecemeal attack on the references. Ariga discloses a system in which sounds of similar sonic characteristics (in this case low frequency sounds) on two separate channels are combined to share a common speaker. This in combination with Phinney and Odom meets the claims.

I. Claims 78, 79, 104 and 105

Regarding Claims 78, 79, 104 and 105, appellant again makes a piecemeal attack on the references alleging that “de Koning does not disclose an amplifier network having amplifier means in separate signal paths”. As shown above apropos of Claims 1 and 29 in the grounds of rejection, Phinney provides teaching for amplifier means in separate signal paths. Appellant goes on to allege that “[t]he amplifiers [in de Koning] are switched to control the system power, not for customizing amplification on a single channel”. This is incorrect. De Koning discloses connecting an auxiliary amplifier (i.e., providing more amplification capability or customizing

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amplification) based on the level of the input signal (column 8, lines 15-23). As such, amplification is customized on the channel.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Daniel Swerdlow

ds

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